DOCUMENT RESUME

ED 232 138 CS 007 220

AUTHOR Stewart-Dore, Nea
TITLE Where Is the Learning We Have Lost in Information? Strategies for Effective Reading in Content Areas.
PUB DATE Jul 82
NOTE 35p.; Paper presented at the World Congress on Reading (9th, Dublin, Ireland, July 26-30, 1982).
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Cognitive Processes; *Content Area Reading; *Directed Reading Activity; *Models; *Reading Comprehension; *Reading Instruction; Reading Skills; Secondary Education; *Teaching Methods; Writing Exercises
IDENTIFIERS *Effective Reading in Content Areas

ABSTRACT

The Effective Reading in Content Areas (ERICA) teaching model comprises four stages: preparing for reading, thinking through information, extracting and organizing information, and translating information. Aspects to consider in the first stage include the preparation of ideas, text, and vocabulary. Two strategies can be used to promote reflection or thinking through reading, the second stage. Having read a selection, students are presented with a series of three sets of statements written at literal, inferential, and applied levels of thinking. Having decided, on the basis of their reading of the passage, which statements they are prepared to defend, students work in small groups to "talk out" their choices. The third stage of the ERICA model addresses teacher concerns about students copying large chunks of text, being unable to distinguish main ideas, and being unable to select information for inclusion in a summary. Extracting and organizing information activities foster independence in selecting and using information given in a text. Activities in the fourth stage, translating information, help students explore subject information through writing in terms of contexts of situation, role, audience, purpose, and form; and through the processes involved in drafting, reviewing, redrafting, editing, and publishing a range of writing. Not all stages need be included in any one teaching unit. (HOD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED232138

WHERE IS THE LEARNING WE HAVE LOST IN INFORMATION?

Strategies for Effective Reading in Content Areas

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Nea Stewart-Dore
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Nea Stewart-Dore
Centre for Studies in Reading
Brisbane C.A.E.
Kelvin Grove Campus
Australia.

Paper presented at the 9th World Congress on Reading,
International Reading Association, Dublin, July, 1982.

CS 007 220

INTRODUCTION

Intending to Learn from Print Information

Textbooks, coursebooks, and an ever increasing plethora of resource books, newspapers, brochures, magazines and teacher written notes are all print media which *record information.* Daily, students are assigned the task of reading from a range of these print materials to *learn information* as part of the process of pursuing knowledge.

Figure I is an extract from a Grade 8 History textbook which enjoys immense popularity in Australian Secondary Schools.

Figure I

GREECE

Home of Learning and Art

So you go to school?

The word 'school' comes from a Greek word, scuola. Strangely, it means 'leisure'. Can you understand why? Do you study geometry? geography? poetry? drama? physics? mathematics? biology? geology? astronomy? grammar? music? Greek words, all of them - changed a little to suit the English language. Atom, electron, proton, neutron, energy, microscope, telescope, thermometer, barometer, hydrogen, oxygen - we have 'borrowed' hundreds of words four our sciences from the scientific Greeks.

Our system of government is called *democracy.* The word and the idea are Greek.

Have you any large old buildings in your town, with beautiful tall columns? They, too, are Greek.

In the arts and the sciences, in language and in ideas, we people of today have learned a vast amount from the wisdom of the ancient Greeks of two-and-one-half millennia ago.

(Oldmeadow, M.W. and Schoenheimer, H.P., The Human Adventure, Cassell Australia, 1971, p.82.

Now there's a certain irony about this extract since the authors, in surveying our debt to the Ancient Greeks in compressed form, conclude its last paragraph with:

> Above all (the Greeks) taught us the value of *thinking things out* to find the truth, rather than merely accepting what others have said and written in the past.
>
> (Ibid, p.82; my emphasis).

If one were optimistic, one might expect the rest of the chapter to be written in a challenging way encouraging students to reflect on the information so that they might *learn*, rather than be bombarded by a collection of miscellaneous facts about the topic. No matter the optimism. The subsequent eleven page "Cook's Tour" of Ancient Greece offers snippets of information about *Who The Greeks Were* (migrant, nomadic tribes; invading colonisers and militiamen; "independent, freedom-loving folk"); *Homer; The Persian Wars; Growing up in Athens; City Life; Country Life; The Olympic Games*, and you can guess the rest ..... Some extracts from documents (Homer, Plutarch, and Plato) along with suggestions for *Inquiry and Research* ("Many Greek postage stamps have designs which tell us about early Greek history. Collect as many as you can"), complete the excursion into the past.

Here then, is the information. What is to be learnt?

If students are expected to engage in reading this kind of material to pursue knowledge about and understandings of the Ancient Greek civilisation in the context of a school history syllabus, this text does little to help them to *think things out*, to explore and negotiate meanings, to challenge, debate and tease out ideas hidden among the mass of information offered.

If we intend students to learn information conveyed in print, without guidance, little wonder they groan when Content Area Reading is assigned.

In pursuit of knowledge, where is the learning we have lost in information?

Outline

This paper *describes a teaching model* comprising specific strategies for Effective Reading in Content Areas (ERICA), designed by A. Morris and the author, of the Centre for Studies in Reading, Brisbane C.A.E., Kelvin Grove Campus, Australia.

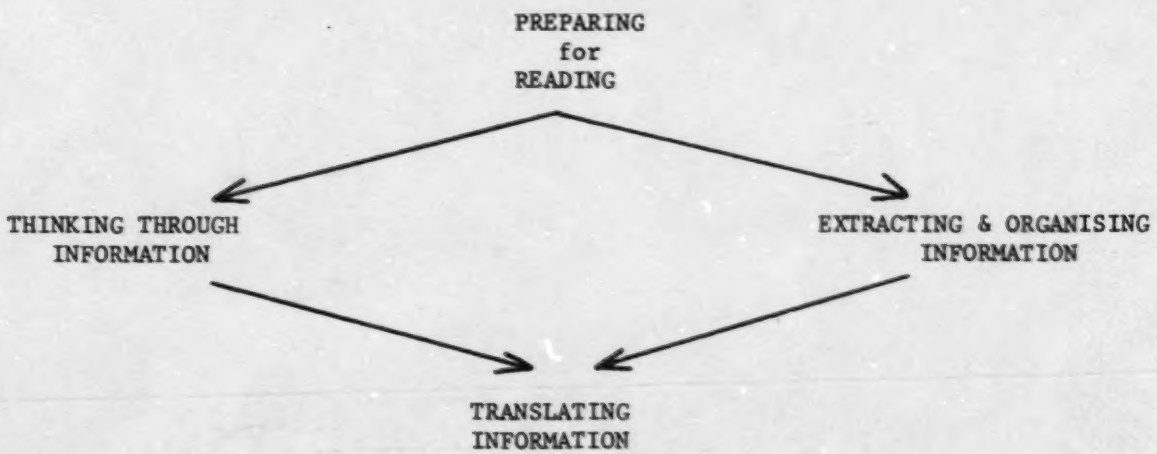
It traces the *development* of the ERICA model and gives *examples of its application* to some curriculum areas.

Comments, from teachers who have systematically used ERICA strategies over a 15 week program, *about their usefulness* to effect learning in school subjects are included.

DESCRIPTION OF THE ERICA MODEL

The ERICA teaching model comprises four stages.

Figure 2.



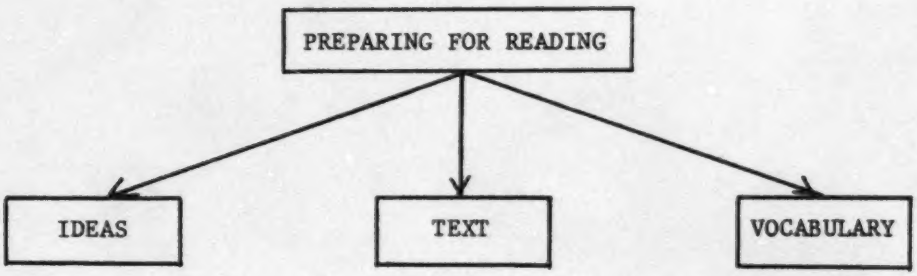
(Morris & Stewart-Dore, 1982)

Not all stages need be included in any one teaching unit. As well, selection of strategies from within the four stages will be determined by the nature of the materials to be used and the content and process objectives to be achieved.

Stage 1. Preparing for Reading.

Aspects to consider in preparing students to read are shown in Figure 3 below.

Figure 3.



(Morris & Stewart-Dore, 1982

Ideas Preparation

The first aspect involved in preparing students to read relates to the ideas or concepts to be learned. The aim is to help students to recognise relationships between and make associations among ideas, to categorise like details, and to structure students' existing knowledge and understandings about a topic into a framework for further exploration through reading.

The strategy used is the *Structured Overview* which is reported frequently in Content Area Reading literature, for example, Barron, 1969; Earle, 1973; Carney, 1977; Walker, 1979, among others. The Structured Overview is used as an Advance Organiser. Key words, which represent the ideas related to a topic, are arranged hierarchically to show superordinate and subordinate relationships. The Structured Overview also shows how related ideas may be clustered.

The Structured Overview introduces a reader to the conceptual demands of the topic represented in text and provides a point of reference against which students can check their understanding as they explore a topic.

Teachers have found that a "brainstorming" method is successful in eliciting from students words and concepts they are already familiar with which are related to a particular topic. These words are listed on the blackboard. Students then work in mixed ability groups to attempt to cluster words into categories before arranging them in a hierarchically structured diagram. Graphic displays prepared by students are compared across groups and also with a Structured Overview the teacher may have prepared in advance. Similarities and differences between diagrams are noted and discussed. A negotiated Structured Overview is accepted as a working framework for reading on the topic, although there is provision made for modifying it as reading and further discussions ensue.

Text Preparation

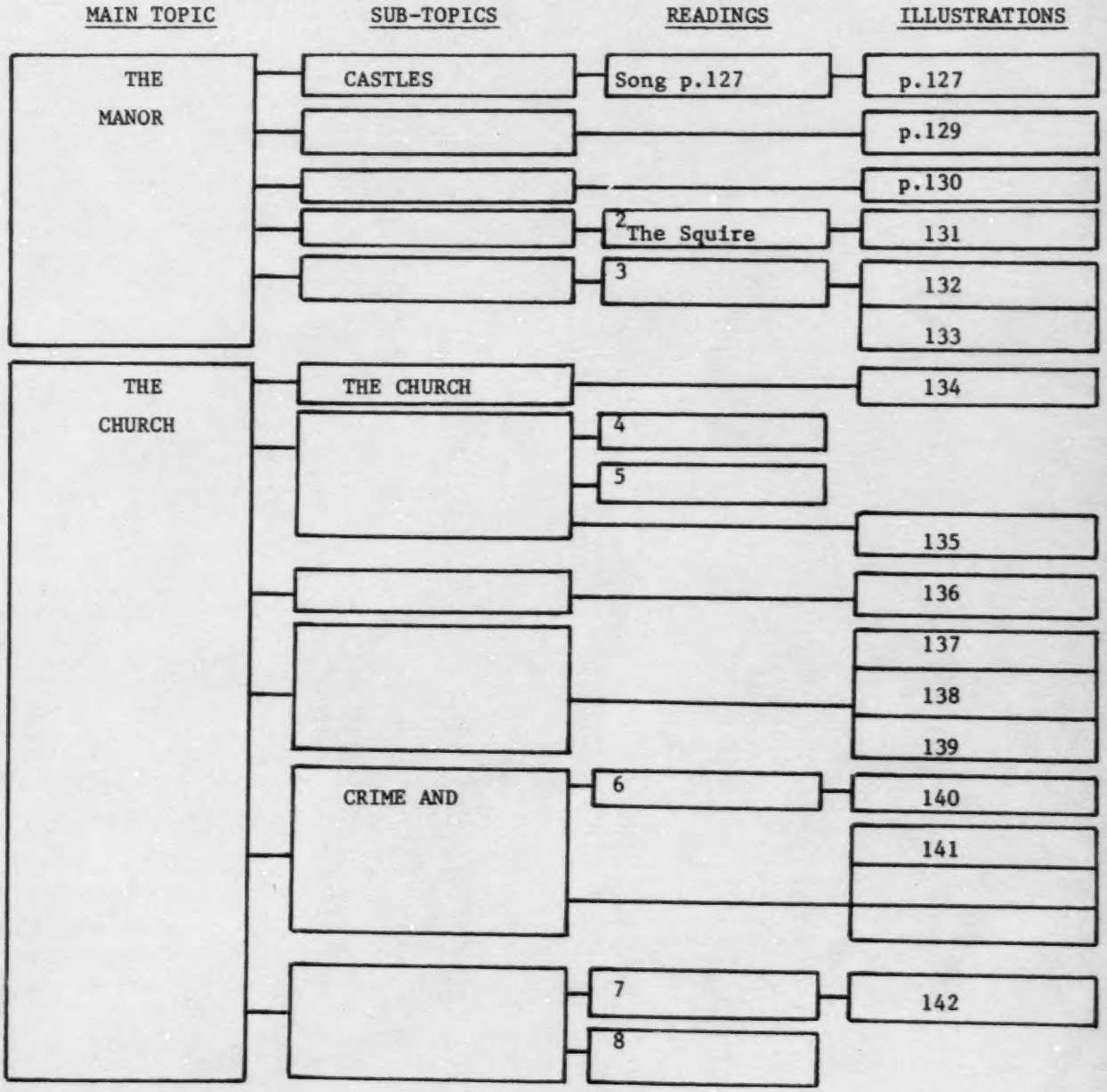
Questions addressed during the text preparation stage include: What demands does the print resource make on the reader? Are the ideas clearly organised? Are aids such as headings, tables, graphs, etc. provided, and if so, are they obviously linked to the written text?

One strategy which has proved useful in helping students to understand text organisation is the introduction of Graphic Outlines. A Graphic Outline demands a *text survey*. An exercise is devised whereby students complete (or create) a visual representation of the way *the author* has signposted ideas in the text using headings, sub-headings and illustrations. Students survey the text (usually a chapter), and either individually or in groups complete a chart which indicates the relative importance of and connections between sections of the text. Figure 4 shows an example of a Graphic Outline.

Figure 4.

Graphic Outline. Chapter 7. The Middle Ages

Munns et al, The Way We Were



(Morris & Stewart-Dore, 1982)

Graphic Outlines may be presented as blank boxes, with or without clues, to be filled in. Alternatively, once students are familiar with their purpose (to explore the conceptual framework of a *signposted* text) and the characteristic layout of a given text, they might prepare their own Graphic Outlines.

A variation of this procedure is to have students survey text signposts to make predictions about what they expect to read given the nature of the headings, as shown in Figure 5.

Figure 5.

Ex.2. Graphic Outline. Ancient Festivals. Hendy et al, Foundations Pages 32-37

Topic Heading (in italics)	A._____	B._____	C._____
Sub-Topic Headings (Black Type)	1)	1) 2)	1) 2)
Illustrations	a) b) I expect this section will tell me about _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	a) b) c) d) e) f) I think this sub-topic will be about _____ _____ _____ _____ and I think sub-topic 2 will be about _____ _____ _____ _____ _____ _____	a) b) Sub-topic 1 will probably tell me about _____ _____ _____ _____ _____ _____ While sub-topic 2 will most likely be about _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

(Morris & Stewart-Dore, 1982)

Vocabulary Preparation

Given that understanding the terminology of a subject is a prerequisite for understanding the subject itself, vocabulary preparation and development is a key to assisting students to communicate easily and precisely, ideas about a particular topic.

A strategy included within the ERICA range is one which requires students to *search for clues to meaning* within the context of vocabulary items to be learnt to increase understanding. Such clues might be definitions, contextual items, signal words and phrases, or synonyms. In those texts where context clues are few, the preparation of glossaries may be necessary. It is important to be selective in choosing vocabulary items for this kind of exercise and to perhaps categorise them according to relative conceptual importance so that students are not subjected to endless pen, paper and dictionary exercises that bear little relationship to exploring ideas to increase understanding of the topic.

To minimise any tendency towards dreariness, another strategy which relies on negotiation of meaning to reach definition concensus *in students' own words*, is suggested.

Stage 2. Thinking Through Information.

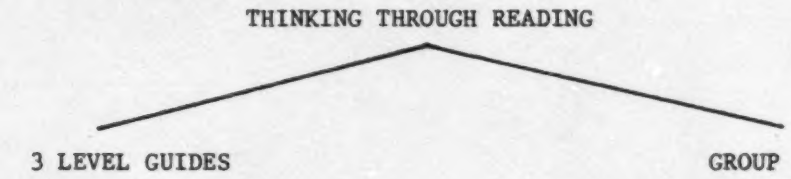
Lunzer & Gardner (1979) observed that in a study of reading in British secondary school classrooms, little *reflection* about what was read took place. Disturbingly, they reported that much assigned reading consisted of short bursts of reading, lasting only a few seconds!

Durkin's (1978) findings in American primary schools revealed that comprehension was only rarely taught. Observations in many classrooms would likely confirm that comprehension is tested after reading, usually by a question-answer method. In other words, comprehension is generally regarded by many teachers as a reading outcome rather than something active and

dynamic involving engagement and thinking. Comprehension in schools is more often product, than process oriented.

The ERICA model proposes two strategies to promote reflection or *thinking through* reading. Thus:

Figure 6.



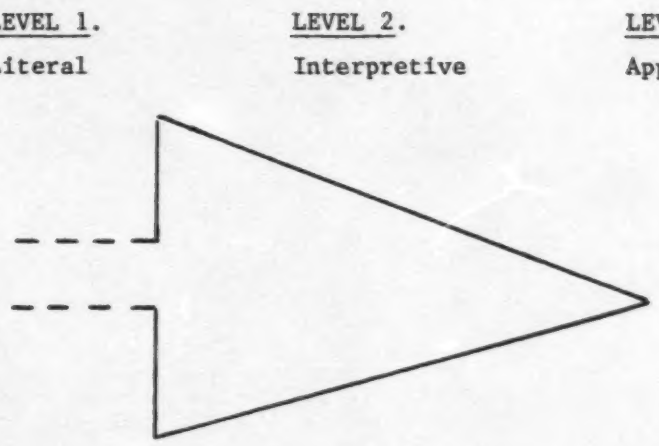
(Morris & Stewart-Dore, 1982)

When used consistently, the strategies of 3 Level Guides and Group Cloze prove effective in developing thinking and comprehension and have the added advantage of being highly motivating. Because of organisational procedures which demand group negotiation of ideas, interpretations, inferences and conclusions, and which require students to justify their reactions to textual information and its application to real world situations, 3 Level Guides (Herber, 1978) particularly, work well.

Having read a selection, students are presented with a series of three sets of statements written at literal, inferential and applied levels of thinking. Having decided, on the basis of their reading of the passage, which statements they are prepared to defend, students then work in small groups to "talk out" their choices.

The three level guide in practice acts rather like an arrowhead as diagrammed in Figure 7.

Figure 7.



(Morris & Stewart-Dore, 1982)

The arrow is directed towards the attainment of the Content Objectives determined by the teacher's purpose in selecting the passage to be read. At the Literal Level, a mass of information needs to be sifted through and carefully selected. At the Interpretive Level, students are required to reflect on what has been read, to link ideas and to make connections between one piece of information and another. Thinking direction, in terms of the ultimate objective is refined and sharpened until at the Applied Level, conclusions can be drawn and generalisations made. An example is provided in Figure 8.

Figure 8.

THREE LEVEL READING GUIDE: THE MacDONNELL RANGES

Read the story below and then complete the three level guide which follows.

The MacDonnell Ranges in the Northern Territory of Australia are surrounded by a vast area of near desert lands. There are rugged mountain ranges running east-west with wide gently sloped valleys between. North and south of the mountains are broad, undulating lands covered with spinafex and mulga.

The land here is constantly dry and hot. Rainfall is not reliable and there are frequent droughts when the blazing sun shines down day after day for years. When the rain does come, grasses and flowers spring to life and a new land is born.

People who live in this area raise cattle. Because of the harsh conditions, the number of cattle per square mile is very low and averages between one and five beasts. Imagine, one cow needing anywhere between 128 to 640 acres to feed itself. Obviously with such a low stocking-rate, properties have to be very large and are measured in tens and even hundreds of thousands of acres.

In drought years, cattlemen suffer heavy losses. Water holes dry up and cattle die of starvation and thirst. Between 1960 and 1966, the number of cattle was halved in some areas. The cattlemen restock their properties in good years and try to rebuild their herds. Unfortunately, this takes time because the land also has to recover.

THREE LEVEL GUIDE: MacDONNELL RANGES

Literal Level

Decide which statements say what the author said in this story.
The words given here may be exactly the same or they may be different words which mean the same thing. Be ready to explain your choices.

_____ 1. The MacDonnell Ranges are rugged mountains.

_____ 2. The MacDonnell Ranges are in a very hot-dry area.

_____ 3. Droughts can last for a few days.

_____ 4. People who live here raise sheep.

_____ 5. The harsh conditions keep the number of cattle down.

_____ 6. Properties are very large.

_____ 7. Cattle drink from water-holes.

_____ 8. Half the cattle in the area died between 1960 and 1966.

_____ 9. The land also has to recover.

_____10. Cattlemen rebuild their herds in good years.

Interpretive Level

Decide which statements can be inferred from the story.
Be ready to justify your choices.

_____ 1. The MacDonnell Ranges are very isolated, lonely places.

_____ 2. Grasses and flowers seed themselves naturally.

_____ 3. Grass and flower seeds are long lived.

_____ 4. Cattle in the MacDonnell Range country are very hardy.

_____ 5. People who live on properties in this area have no close neighbours.

_____ 6. Raising cattle in the MacDonnell Ranges is not a very reliable business.

_____ 7. The years 1960-1966 were drought years.

_____ 8. A new land was born in the MacDonnell Ranges in 1967.

Applied Level

Decide which statements you think the author would support.
Be ready to give your reasons.

_____ 1. People have to learn to take the rough with the smooth.

_____ 2. Cattle from the MacDonnell Ranges probably need fattening-up somewhere else before being sent to market.

_____ 3. Children who live on large cattle properties probably get very little schooling.

(Morris & Stewart-Dore, 1982)

Group Cloze activities comprise passages where deletions are made on the basis of clues to meaning available in the text. By using Cloze to cause a reader to "read around" a deleted word and then, having decided on an appropriate choice, to have him or her justify the choice in terms of clues and the rejection of possible alternatives, more thoughtful reading is promoted. One such Group Cloze exercise was designed for use in a Grade 8 Science class. Students had previously had experience in using mercury-in-glass thermometers in the laboratory.

Figure 9. Fill in each blank in the following exercise with the one word which you think makes the best sense. Work by yourself and try to remember why you chose each word. When you have finished compare your ideas with your partner's and try to decide which words fit best.

How a Thermometer Works.

You have seen that a Thermometer is designed to measure temperatures over a range of values. In order to do this it has to have a scale which has definite (fixed) points. The (1)_____ also has to have something inside it which moves along the (2)_____ to show us any (3)_____ in temperature.

The thermometers we have used have had the (4)_____ point of ice as the (5)_____ fixed point and the boiling point of (6)_____ as the upper (7)_____ point of their (8)_____. In these thermometers, mercury has been used to (9)_____ changes in temperature.

When the temperature (10)_____ the mercury expands and moves (11)_____ the scale to show us this rise in temperature. When the temperature falls, the mercury (12)_____ and moves (13)_____ the scale and shows a lower temperature.

A mercury thermometer is made of a glass tube which has thick walls. At the bottom of the thermometer is a small bulb which holds the (14)_____. The bulb is made of very thin glass so that any changes in (15)_____ quickly affect the (16)_____ and (17)_____ it to move up or down the scale. Inside the thermometer the mercury moves up and down a very, very (18)_____ tube, which is only as thick as a hair. This (19)_____ has had all the air sucked out of it so that the mercury can (20)_____ move up and down.

(Steer, 1982)

Stage 3. Extracting and Organising Information.

The third stage of the ERICA model addresses teacher concerns about students copying large chunks of text, being unable to distinguish main ideas and being unable to select information for inclusion in a summary. Extracting and Organising Information activities foster independence in selecting and using information given in a text. Activities are designed to help students select information relevant to a task or content objective, to "get information off the page and into the head" and to reorganise it in some form so that it can be used, acted upon and communicated meaningfully to someone else.

By doing, students are caused to emulate specific thinking processes, be they those to follow directions, solve problems or to synthesise ideas and reconstruct them in a meaningful way.

Thus, Grade 12 students, with teacher guidance, used the diagram in Figure 10 to help them analyse and understand the rather complex web of ideas in a Study of Society unit chapter on "Motivation to Work". Students used the skeleton outline provided to establish the thrust of the arguments contrasted in two theories, thus helping them to discard irrelevant information which earlier had impeded understanding.

Figure 10.

10. MC GREGOR'S THEORY - X and THEORY - Y.

TYPES OF MANAGEMENT PHILOSOPHY	BASIC PRINCIPLES (MAIN ELEMENTS)		THE AVERAGE MAN IS:		
	1. _____	A	1. _____	M	Y _____
AUTHORITARIAN	_____	S	_____	O	_____
	_____	S	_____	T	_____
		U	2. _____	I	_____
	2. _____	M	_____	V	_____
	_____	P	3. _____	A	_____
	3. _____	T	_____	T	_____
	_____	I	4. _____	O	_____
		O	_____	R	_____
	1. _____	N	5. _____	S	X _____
DEMOCRATIC	_____	S	_____		_____
	_____				_____
	2. _____				_____
	_____				_____
	_____				
	3. _____				
	_____				
	_____				
	4. _____				
	_____				
	_____				

(Downes, 1981)

Other examples of the kinds of activities devised to increase students' perceptions and understandings of ways ideas are embedded and related in text are illustrated in Figures 11 and 12. These derive from Grade 8 Geography and Grade 10 Home Economics curriculum units respectively.

Figure 11.

EXERCISE 6. EXTRACTING AND ORGANISING INFORMATION.

1. On p. 78 of your text there are 3 diagrams with explanations of what causes rain. Your job now is to organise the information into cause-effect sequence charts to show the different ways rain can develop. The first one is done for you as a model.

	Cause → Effect
Orographic Rain	warm, moist sea air + mt range → warm air rises → air cools → water condenses → rain
Convection Rain	
Frontal Rain	

2. When you have finished, compare your charts with those of others in your group. See if they have included the same information.

3. Decide which charts are the most accurate. Be ready to give your reasons

(Morris & Stewart-Dore, 1982)

Figure 12.

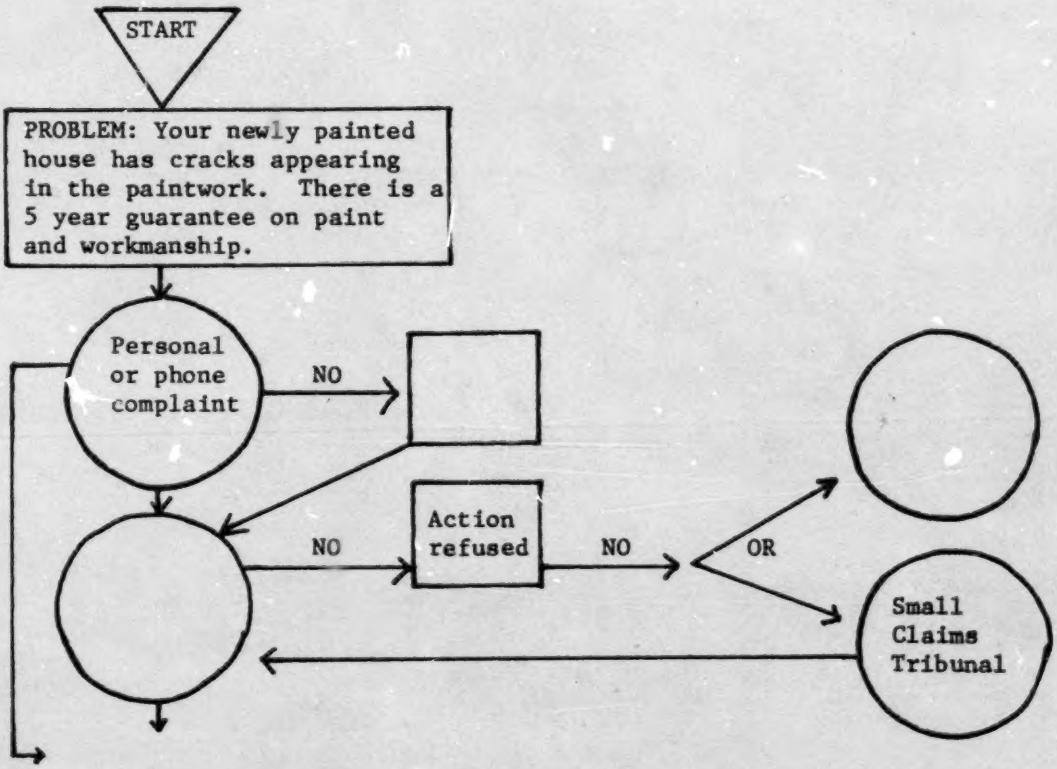
EXTRACTING AND ORGANISING INFORMATION

OBJECTIVE: to identify the steps available to the consumer to complain about faulty goods or services.

Read the pamphlet *"This is no way to handle a complaint"* to find out what steps you, the consumer, can take to complain about faulty goods or services.

Using the information in the pamphlet, complete the following flow chart.

LODGING A COMPLAINT



This diagram shows one way of displaying the steps to take if you want to lodge a complaint.
Try to improve upon its clarity by drawing a flow chart of your own.
Remember that you need to show all steps and any alternative actions that you can take.

(Morris & Stewart-Dore, 1982)

Stage 4. Translating Information.

Reading, writing and talking are all aspects of interrelated language/thinking processes through which we can learn more about the world around us. *Talking* about reading in small discussion groups is generally accepted as a fruitful procedure to negotiate meanings and understandings, to explore, no matter how tentatively, new ideas and experiences and to trial and rehearse interpretations of information gleaned from text. *Writing*, on the other hand, would seem to be rarely exploited as a legitimate way of exploring and clarify ideas. While many subject teachers, when asked, protest that they value writing as a learning tool in principle, and indeed *prescribe* it frequently (as an assessment device), there is little evidence from classroom practices in Queensland High Schools at least, that time is made for extended writing as an exploratory learning experience, let alone to satisfy real purposes addressed to real audiences. Of course, there are exceptions, but these are few and far between beyond English subject classrooms.

Because it is believed that writing is an integral part of going about acquiring school knowledge, the ERICA model incorporates a writing strand called *translating information*.

The writing that is done *across* the curriculum is mostly predictable: summaries, a few notes, a paragraph, a short answer, an essay. While these forms undoubtedly have their place and serve worthwhile purposes, there are many other forms available to writers, and certainly there are audiences other than the class teacher.

Translating information activities seek to help students explore subject information through writing in terms of the following: contexts of situation, role, audience, purpose and form, and through the processes involved in drafting, reviewing, redrafting, editing and publishing a range of writing, either individually or in groups.

Thus, having developed an appropriate means for extracting information (ERICA Stage 3) relevant to a given writing task, students are provided with a *context of situation* within which they are invited to assume a *role*. In that role, they then work together to explore the ways in which specific kinds of information might be presented from that *point of view* to a given *audience*. *Purpose* for and *form* of writing are either given or negotiated prior to preparing a rough, first draft which will be progressively reviewed, revised, edited and published.

One example of a Translating Information activity, the success of which stunned even the most sceptical of a group of Grade 8 History teachers, derived from reading a document which purported to describe Ancient Egyptian craft workshops. Students had selected text information to provide details of the range of goods manufactured, the nature of raw materials and tools used in the workshops under generalised headings as an extracting and organising exercise prior to beginning the extended and negotiated writing task.

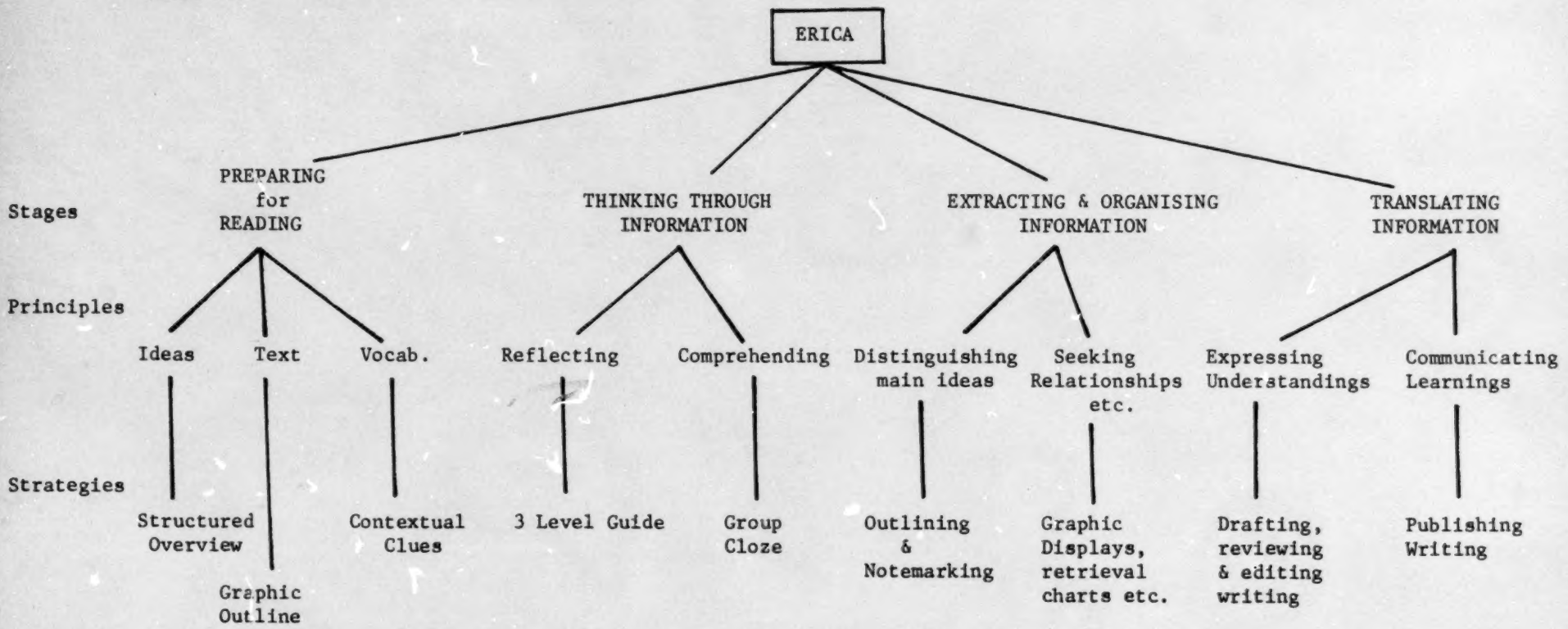
The *context of situation* for writing was a guided tour of the workshops, which required students to place themselves within the situation described in the text. Their *role* was that of tour leader. Their *audience* were peer "tourists"; the *purpose* was to provide information about what would be seen, and the suggested *form* was a brochure to illustrate and explain the various sights. In the teacher's words,

> This exercise surprised me more than any they have done. Most students went to great lengths to make interesting ..... brochures. Even kids who appear uninterested in most of the other things showed enthusiasm for this project. This would rate as one of the best parts of the program to date.

Summary

Components of the ERICA model are displayed graphically:

Figure 13.



(Stewart-Dore, 1982)

DEVELOPMENT OF THE TEACHING MODEL.

A number of influences prevailed during the development of the ERICA model. These included:

a) expressed teacher concerns about how best to help students use reading effectively to learn content information as set down by school curricula guidelines and work programs;
b) a review of current literature on Content Area Reading and Language Development as it related to school learning;
c) the experience of its developers in teaching a range of pre- and in-service courses in language and reading, and
d) the perceived need to link heretofore discrete language/reading teaching strategies into a coherent sequence of planned and systematic teaching procedures which could be readily incorporated into existing school programs.

The practical development of the model took place in the context of inservice workshops for practising, experienced teachers during 24 week programs conducted during 1980 and 1981. From a range of available strategies which seemed to address these teachers' concerns about such things as vocabulary development, comprehension, research and study skills and students' writing abilities, a number were identified for trialling and refinement by the teacher groups. Teachers worked in subject groupings to apply specific strategies to help them teach current curriculum content. Between weekly attendance at workshops at the C.A.E., they implemented the techniques, refined them and later swapped experiences, successful and otherwise, in using the strategies across the curriculum, Grades 8-12. Many chose to work on syllabus topics rather than isolated lessons. In this way, a range of work units incorporating reading-to-learn strategies was built up for exchange and further trialling.

Since that time, as a consequence of much review and refinement by the developers working in association with practising teachers, the ERICA model has undergone several modifications. While the strategies themselves are not necessarily unique, their combination within a comprehensive language using and information learning framework is at least different from other attempts to develop integrated models. Carney (1977) for example, uses teacher modelling to teach strategies for developing vocabulary, improving comprehension and heightening understanding of text organisation. During inservice programs, Cassidy (1977) set out to produce support materials aimed at developing and

reinforcing reading skills particularly appropriate to a given Content Area, as well as the preparation of "folder stations" for use in English lessons and to advance functional literacy. Each has its own merits.

Practising the Model.

The ERICA model has been the subject of close scrutiny in four schools during a semester long Evaluation Project sponsored by the Queensland In-service Education Committee. The major object of the study was to examine the effects of systematic use of planned ERICA strategies in Grade 8 Science, Geography, History and English classes on attitudes to reading, reading comprehension, study skills, subject performance and writing development.

TEACHER OPINION OF THE ERICA MODEL.

For the duration of the ERICA Evaluation Project, participating teachers of experimental classes maintained lesson diaries. (Appendix I). These were designed to monitor which ERICA strategies were used, to encourage teachers to describe how they taught students to process print material, and to gain as honest an opinion as possible about limitations of and difficulties encountered in implementing the model.

What follows are verbatim diary entries recorded in response to a range of ERICA strategies.

Stage 1. Preparing for Reading.

Strategy / Subject	*Structured Overview*	*Graphic Outline*	*Vocabulary*
Science	I didn't prepare enough ideas for when students stopped giving suggestions. It was difficult to get responses.	Students need more practice when distinctions between headings are not obvious.	Some students are wary of writing down something that may be incorrect. Most students were on the right track but were not definite enough.
History	Students were excited & worked hard. Time was the problem ... This was the second lesson on the S.O. & it is still not complete. Students don't seem to understand why they are doing this.	Some non-committal, others "not again!" Students enjoy these.	Students responded well - they needed lots of encouragement but it was worthwhile. These exercises seem to generate useful discussion.
Geography	S.O. seemed to them to be a LOGICAL method of looking at a topic.	Students were very enthused. Some needed constant help to sustain interest. Students are learning a new concept - that diagrams actually mean something.	They were excited because they knew some explanations before they looked in the textbook. Very good. This seemed to work the best of any strategies. Students were actually talking about Geography.

Stage 2. Thinking Through Information.

Strategy / Subject	*Three Level Guide*	*Group Cloze*
Science	(First attempt) Students are not 'free' enough to talk about what they find out.	Students need to find the first couple of easily. Slow learners are stifled if they have difficulty with the first word. Joined in discussions well.
History	Interested - all working in groups - evidence of weaker students being helped by better students Many students were at a loss in making decisions, reaching conclusions.	(This strategy does not appear to have been used often in this subject. The only recorded comment about its use was "good".)
Geography	Students were keen to get their point of view across. Students like this exercise - no need to WRITE! These generate the most interest and positive discussions.	This generated quite a good deal of discussion which I felt was positive.

Stage 3. Extracting and Organising Information.

Strategy / *Subject*	*Various graphic forms depending on the nature of the material and content objectives.*
Science	Students agreed that this was an easier way to study the information. Students needed prompting, but appeared to appreciate the value of the end result.
History	They found the timeline fairly difficult. (Ancient China: the text was not chronologically ordered.) Fits in well. A good means of summary. Students enjoy it but have some location problems. Lesser ability students express a liking for these activities as they can see their usefulness.
Geography	Necessary to talk students through the exercises. They seemed to be making a good attempt to understand the concepts. This appears to be a good way to teach these fairly complex ideas. (Weather and Climate.)

Stage 4. Translating Information.

Strategy / Subject	*Contextualising Writing*
Home Economics	Very successful. It pointed to the need to 'think through' a letter and draft a rough copy, etc. Very enthusiastic reception from class. VERY ENTHUSIASTIC. Students had long discussion when they exchanged letters.
History	In one class we had a lot of fun with the panels and it looked as if they learned a lot from it. .....the other group.....I doubt if much was learnt from it.
Geography	In both classes the response was enthusiastic. They enjoyed it but it could have been better if more information had been provided. They took a great deal of pride in the fact that they could explain topographical maps to someone else.....there are many ways of talking about that information. It was very difficult to condense.....At this point the students appear to be getting so they can accomplish these tasks (about 2/3 way through the semester).

CONCLUSION

The intention of the ERICA model is to provide teachers with a range of strategies from which to choose to help students use reading as an effective tool for learning. The suggested methods of working - brainstorming, small group work, exploring possibilities and negotiating meaning and concensus opinion - have sometimes caused difficulties for students and teachers alike. Some students find initial insecurity in procedures which offer options rather than "correct answers", and teachers have sometimes experienced difficulty in modifying their teaching style to accommodate mixed ability small group interaction particularly.

Nevertheless, teachers have indicated that when procedural problems have been sorted out, both they and their students have been engaged in worthwhile learning experiences. It remains to be seen whether or not student learning outcomes can be measured to show significant improvement as a consequence of using ERICA strategies.

Where is the learning we have lost in information? Experience is teaching us that if students are shown how information is structured, and are given opportunities to explore its content and meanings through activities designed to help them process it more efficiently through reading, writing and oral language transactions, then learning is at least detectable amid the mass of information which confronts students in Content Area classrooms.

The use of ERICA strategies is one way of assisting teachers to encourage students to assume greater responsibility for their own learning in their pursuit of knowledge.

REFERENCES

Barron, R.F. *The Use of Vocabulary as an Advance Organiser* in Herber & Sanders, *Teaching Reading In Content Areas*, 1. Syracuse University, 1969.

Carney, J.J. *Reading and Academic Content: Toward a Theory of Integration.* Paper presented at the Reading Association of Ireland annual meeting, Dublin, October, 1977. (ED 162 251)

Cassidy, J. *"Project C.A.R.E."* Teacher, Vol 94, No. 8. January, 1977.

Downes, I. *Motivation to Work.* Study of Society Unit, Grade 12. Kedron High School, Brisbane, 1981.

Durkin, D. *What Classroom Observations Reveal about Reading Comprehension Instruction.* Technical Report No. 106. Urbana, Illinois: Center for The Study of Reading, University of Illinois, October, 1978. (ED 162 259)

Earle, R. *Cognitive Readiness: An Overview of Research.* in Herber, H.L. & Barron, R.F. *Research in Reading in Content Areas: 2nd Year Report.* Syracuse University, 1-13, 1973.

Hendy, A. et al., *Foundations*, Thomas Nelson Australia, Melbourne 1976.

Herber, H.L. *Teaching Reading in Content Areas.* Englewood Cliffs, New Jersey, Prentice-Hall, 1978.

Lunzer, E. & Gardner, H. (Eds). *The Effective Use of Reading.* London, Heinemann Educational Books for the Schools Council, 1979.

Morris B. & N. Stewart-Dore. *Assigning Reading as a Teaching Strategy.* Kelvin Grove C.A.E., Brisbane, 1982.

Morris, B. & N. Stewart-Dore. *Where is the Understanding we have lost in Knowledge?* Paper presented at the 7th Australian Reading Conference, Darwin, August 1981.

Morris, B. & N. Stewart-Dore. *Learning to Learn From Text: Strategies to Effect Learning through Reading.* Sydney, Addison-Wesley (in press).

Munns, C., et al *The Way We Were*, Vol. 2 Wm Brooks & Co., Brisbane, undated.

Steer, D.

Stewart-Dore, N. *Literacy Through Reading.* Paper accompanying practical workshop AATE Conference, Brisbane, June 1982 (a)

Stewart-Dore, N. *Content Area Reading Courses: Pre-service Theory and In-Service Practice.* Paper presented at the UKRA Annual Course and Conference, Newcastle-upon-Tyne, July 1982 (b)

Oldmeadow, M & H. Schoenheimer. *The Human Adventure.* Melbourne, Cassell Australia, 1971.

Walker, N. *The Effect of Graphic Organisers on Learning Social Studies Content and Attitude toward Reading* in Herber & Riley, *Teaching Reading in Content Areas, 4* Syracuse University, 1979.